Alterasi akibat proses hidrotermal di daerah Kulon Progo dan sekitarnya, Daerah Istimewa Yogyakarta

Agus Harjanto
Program Studi Teknik Geologi, FTM-UPN "Veteran" Yogyakarta.

Abstrak

Daerah penelitian secara administrasi terletak di Kabupaten Kulon Progo, Propinsi Daerah Istimewa Yogyakarta dan Kabupaten Purworejo, Propinsi Jawa Tengah. Secara geografis daerah penelitian berada pada 110°00'00" BT - 110°15'02" BT dan 7°35'00" LS – 7°50'30" LS, dengan luas 32 x 32 km^2.

Geologi daerah penelitian didominasi oleh batuan vulkanik berumur antara Oligosen-Miosen. Batuan volkanik tersebut termasuk dalam Formasi Andesit Tua yang terdiri dari breksi vulkanik, tuf, andesit, dasit dan diorit. Selain itu batuan vulkanik juga termasuk dalam Busur magmatik Sunda-Banda.

Batuan vulkanik ini mempunyai komposisi kimia antara andesit basaltik sampai dasitik dan termasuk seri batuan kalk alkali. Fenokris batuan terdiri dari piroksen, hornblende, plagioklas, felspar alkali dan kuarsa.

Batuan volkanik yang terubah akibat proses hidrotermal di daerah kulon progo dapat dibagi menjadi 3 (tiga) zona alterasi, yaitu ; 1. Zona alterasi Filik yang karakteristiknya muncul mineral ubahan kuarsa-serisit-klorit, 2)Zona alterasi Prophyllitik dicirikan munculnya mineral ubahan klorit-epidot-kalsit dan Zona alterasi Argillik dicirikan dengan munculnya mineral ubahan illit-kaolin-monmorilonit.

Kata kunci : alterasi, filik, sumber panas, propilitik, argillik

Abstract

The Study area is located at between Resency Kulon Progo, Special Region of Yogyakarta Province and Kabupaten Purworejo distinct, Central Java Province, with geography coordinates of 110°00'00" BT - 110°15'02" BT and 7°35'00" LS - 7°50'30" LS. This area has 1024 km^2 (32 km x 32 km) wide.

The volcanic rocks in Kulon Progo were formed during Oligocene-Miocene time and have undergone alteration since that time. They mostly form the Old Andesite Formation, which consists of interbedded volcanic breccia, tuff, andesite, dacite and diorite. They are part of the magmatic Sunda-Banda Arc.

These volcanic rocks have chemical compositions that range from basaltic andesite to dacitic and from low potassium series to calc-alkaline series. Phenocrysts consist of pyroxene, hornblende, plagioclase, alkali feldspars and quartz.

The rocks have under gone hydrothermal alteration and based on mineral alteration assemblages, they can be divided into three alteration zones. These zones are : 1) A phyllic zone that is characterized by quartz-sericite-chlorite, 2) A prophyllitic zone that is characterized by chlorite-epidote-calcite, 3) An argillic zone characterized by illite-kaolinite-monmorilonite.

Keywords : alteration, phyllic, heat sources, prophyllitic, argillic